

CLAIMS

We claim:

1 1. A truss jig positioning system comprising:
2 a table having a support plane on which work pieces are
3 supported, the table comprising a plurality of segments, side edges
4 of adjacent segments of the plurality of segments defining a slot;
5 a pair of pin assemblies movable independently of each other
6 along the slot;
7 movement means for independently moving the pin assemblies
8 along the slot; and
9 detecting means for detecting interference with movement of
10 one of the pin assemblies.

1 2. The system of claim 1 wherein the movement means
2 comprises:
3 rotation means for producing rotational motion;
4 converting means for converting rotational motion into
5 translational motion by one of the pin assemblies; and
6 rotation transferring means for transferring rotational motion
7 of the rotation means to the converting means.

1 3. The system of claim 2 wherein the rotation transferring
2 means is capable of permitting slippage between the rotation means
3 and the converting means when translational movement of the pin
4 assembly is resisted.

1 4. The system of claim 2 wherein the detecting means
2 comprises:
3 means for determining when rotational motion by the rotation
4 means is not transferred to the converting means; and
5 means for temporarily delaying further actuation of the
6 rotation means when rotational motion by the rotation means is not
7 transferred to the converting means.

1 5. The system of claim 4 additionally comprising means for
2 reinitiating rotational movement of the rotation means.

1 6. The system of claim 5 wherein the means for reinitiating
2 rotational movement of the rotation means is delayed for a
3 predetermined time period.

1 7. The system of claim 4 additionally comprising means for
2 canceling further movement of the pin assemblies after a preset
3 number of attempts to reinitiate rotational movement of the rotation
4 means does not result in rotational motion by the rotation means
5 being transferred to the converting means.

1 8. The system of claim 1 wherein the movement means
2 comprises:
3 a rod operatively coupled to one of the pin assemblies;
4 a motor;
5 a driver pulley mounted on the motor for being rotated by the
6 motor;
7 a driven pulley;
8 a belt connecting the driven pulley to the driver pulley for
9 transferring rotation of the driver pulley to the driven pulley in a
10 manner permitting rotational slippage between the belt and one of
11 the pulleys if rotation of the driven pulley is resisted;
12 means for operatively coupling the driven pulley to the rod in
13 a manner preventing rotational slippage between the driven pulley
14 and the rod such that rotation of the driven pulley directly
15 corresponds to rotation of the rod; and
16 a position sensor operatively connected to the driven pulley
17 for sensing rotation of the driven pulley and thereby sending
18 rotation of the rod.

1 9. The system of claim 8 wherein the detecting means
2 comprises:
3 means for determining when rotation by the motor is not
4 transferred to the rod;
5 means for temporarily delaying further actuation of the motor
6 when rotation by the motor is not transferred to the rod;
7 means for reinitiating rotation of the motor.

1 10. The system of claim 9 wherein further actuation of the
2 motor is delayed for a predetermined time period.

1 11. A truss jig positioning system comprising:
2 a table having a support plane on which work pieces are
3 supported, the table comprising a plurality of segments, side edges
4 of adjacent segments of the plurality of segments defining a slot;
5 a pair of pin assemblies movable independently of each other
6 along the slot; and
7 a pair of rods for moving the pair of pin assemblies, each of
8 the rods moving one of the pin assemblies along the slot
9 independently of the other of the pin assemblies;
10 wherein each of the rods is positioned below one of the
11 adjacent segments of the table that define the slot.

1 12. The system of claim 11 wherein a first one of the pair of
2 rods is located below a first one of the adjacent segments of the
3 table defining the slot, and a second one of the pair of rods is
4 located below a second one of the adjacent segments of the table
5 defining the slot.

1 13. The system of claim 11 wherein each of the side edges of
2 the adjacent segments of the table associated with the slot defines a
3 substantially vertical plane with a zone being defined between the
4 substantially vertical planes of the side edges, each rod of the pair
5 of rods being located outside of the zone of the slot.

1 14. The system of claim 11 wherein a side channel is formed
2 below each of the side edges of the adjacent segments, each rod of
3 the pair of rods being nested in one of the side channels of the
4 adjacent segments of the table.

1 15. The system of claim 11 additionally comprising position
2 sensing means for sensing rotation of one rod of the pair of rods to
3 determine a position of one of the pin assemblies along the slot.

1 16. The system of claim 11 additionally comprising detecting
2 means for detecting interference with movement of one of the pin
3 assemblies.

1 17. The system of claim 11 additionally comprising:
2 a motor;
3 a driver pulley mounted on the motor for being rotated by the
4 motor;
5 a driven pulley;
6 a belt connecting the driven pulley to the driver pulley for
7 transferring rotation of the driver pulley to the driven pulley in a
8 manner permitting rotational slippage between the belt and one of
9 the pulleys if rotation of the driven pulley is resisted;
10 means for operatively coupling the driven pulley to one rod of
11 the pair of rods in a manner preventing rotational slippage between
12 the driven pulley and the rod such that rotation of the driven pulley
13 directly corresponds to rotation of the rod; and
14 a position sensor operatively connected to the driven pulley
15 for sensing rotation of the driven pulley and thereby sending
16 rotation of the rod.

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1 18. The system of claim 11 wherein the pair of rods
2 comprises a first and second rod, the first rod having a threaded
3 exterior surface; and
4 wherein at least one of the pin assemblies comprises:
5 a pin carriage moveable along the slot;
6 a pin mounted on the pin carriage and extending through
7 the slot above the support plane;
8 a first passage extending through the pin carriage with
9 the first rod passing through the first passage, the first
10 passage having an interior surface adapted to engage the
11 threaded exterior surface of the first rod such that rotation of
12 the first rod produces movement of the pin carriage; and
13 a second passage through the pin carriage with an
14 interior surface that is adapted to permit free movement of the
15 second rod through the second passage when the first rod
16 causes movement of the pin carriage.

1 19. The system of claim 14 wherein each of the side channels
2 comprises a top wall, a back wall, and a bottom wall with the
3 opening extending between the top and bottom walls.

1 20. The system of claim 11 wherein the pair of pin
2 assemblies are capable of pinching a building element therebetween
3 for locating a position of the building element on the table.